WHAT IS CLAIMED IS:

1. An information recording/reading apparatus that reads information from a recording medium at a timing synchronized with a read signal by reproducing a clock used when recording the information with timing reproduction data, comprising:

a signal delay unit that delays signal data read from the recording medium for a predetermined time, the signal data having the timing reproduction data that is split and recorded in the recording medium by setting a middle portion of the timing reproduction data as an area for recording the information; and

a frequency offset detecting unit that detects, during the predetermined time, a frequency offset that is a frequency difference between a clock of the read signal and an operation clock of the information recording/reading apparatus using the timing reproduction data that is split and recorded in the recording medium.

2. The information recording/reading apparatus according to claim 1, wherein

the timing reproduction data is cyclic waveform data, and

a phase of the timing reproduction data that is split and recorded in the recording medium is continuous.

3. The information recording/reading apparatus according to claim 2, wherein

the timing reproduction data is divided into a plurality of blocks,

and

the frequency offset detecting unit detects the frequency offset based on a difference between a phase difference of a cyclic waveform of a leading block from a reference waveform and a phase difference of a cyclic waveform of an ending block from the reference waveform.

4. The information recording/reading apparatus according to of claim 1, further comprising:

a recording unit that splits the timing reproduction data and records the timing reproduction data split in the recording medium.

5. The information recording/reading apparatus according to claim 1, wherein sync data for recognizing a leading position of the information and the information are recorded between the timing reproduction data that is split and recorded in the recording medium.

6. An information recording/reading circuit that reads information from a recording medium at a timing synchronized with a read signal by reproducing a clock used when recording the information with timing reproduction data, comprising:

a signal delay circuit that delays signal data read from the recording medium for a predetermined time, the signal data having the timing reproduction data that is split and recorded in the recording medium by setting a middle portion of the timing reproduction data as an area for recording the information; and

a frequency offset detecting circuit that detects, during the predetermined time, a frequency offset that is a frequency difference between a clock of the read signal and an operation clock of the information recording/reading circuit using the timing reproduction data that is split and recorded in the recording medium.

7. The information recording/reading circuit according to claim 6, wherein

the timing reproduction data is cyclic waveform data, and

a phase of the timing reproduction data that is split and recorded in the recording medium is continuous.

8. The information recording/reading circuit according to claim 7, wherein

the timing reproduction data is divided into a plurality of blocks, and

the frequency offset detecting unit detects the frequency offset based on a difference between a phase difference of a cyclic waveform of a leading block from a reference waveform and a phase difference of a cyclic waveform of an ending block from the reference waveform.

9. The information recording/reading circuit according to of claim 6, further comprising:

a recording circuit that splits the timing reproduction data and records the timing reproduction data split in the recording medium.

10. The information recording/reading circuit according to claim 6, wherein sync data for recognizing a leading position of the information and the information are recorded between the timing reproduction data that is split and recorded in the recording medium.

11. An information recording/reading method to read information from a recording medium at a timing synchronized with a read signal by reproducing a clock used when recording the information with timing reproduction data, comprising:

delaying signal data read from the recording medium for a predetermined time, the signal data having the timing reproduction data that is split and recorded in the recording medium by setting a middle portion of the timing reproduction data as an area for recording the information; and

detecting, during the predetermined time, a frequency offset that is a frequency difference between a clock of the read signal and an operation clock of the information recording/reading apparatus using the timing reproduction data that is split and recorded in the recording medium.

12. The information recording/reading method according to claim 11, wherein

the timing reproduction data is cyclic waveform data, and

a phase of the timing reproduction data that is split and

recorded in the recording medium is continuous.

13. The information recording/reading method according to claim 12, wherein

the timing reproduction data is divided into a plurality of blocks, and

the frequency offset detecting unit detects the frequency offset based on a difference between a phase difference of a cyclic waveform of a leading block from a reference waveform and a phase difference of a cyclic waveform of an ending block from the reference waveform.

14. The information recording/reading method according to of claim 11, further comprising:

splitting the timing reproduction data; and

recording the timing reproduction data split in the recording medium.

15. The information recording/reading method according to claim 11, wherein sync data for recognizing a leading position of the information and the information are recorded between the timing reproduction data that is split and recorded in the recording medium.